

3-153
CSD Environmental
Services

2220 Yale Blvd.
Springfield, Illinois 62703
217/522-4085

June 19, 1995

US EPA RECORDS CENTER REGION 5



1000311

Kevin Lesko
Illinois Environmental Protection Agency
BOL - Permit Section - #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

RE: 1198010003 - Madison County
Chemetco Closure Costs
Part B

Dear Mr. Lesko:

Pursuant to your request, we have revised the contingent cost estimate for the facility. The contingent closure cost estimate provided is based on putting an asphalt cover over the cooling water canals and zinc oxide lagoons.

I hope this adequately responds to your request. If you have any questions or need additional information, please call me.

Sincerely,

Cindy S. Davis
President
CSD Environmental Services, Inc.

RECEIVED

JUN 22 1995

EPA - BOL
PERMIT SECTION

TABLE 8-1
CLOSURE COST ESTIMATE
CHEMETCO, INC.

ACTIVITY	UNIT	QUANTITY	UNIT COST ¹	TOTAL COST ²
ZINC OXIDE BUNKER				
Decontamination of Unit				
Remove ZnO contents from bunker using Pump, assuming 4,500 cy/day	DAY	14	750	10,500
Open bunker wall to allow equipment access 8" reinforced concrete	SF	200	8.86	1,772
Scrape and sweep bunker to remove residue (Chemetco equipment)	DAY	2	500.00	1,000
High Pressure wash to clean bunker (Chemetco equipment)	SAMPLE	3	500.00	1,500
Analyze rinsate samples metals (Pb and Cd)	HR	10	35.00	350
Soil Sampling and Analysis (App. IX)	SAMPLE	8	1000.00	8,000
PE Certification	HR	24	80	1,920
Subtotal				25,042
20% Contingency				5,008
10% Administration				2,504
TOTAL				\$ 32,554
COOLING WATER CANAL				
"As-Is" Closure Demonstration				
Data Generation/Evaluation (Subsurface Investigation and/or Analysis of max. 48 Samples for Pb & Cd)	NA	NA	NA	6,000
Modeling Software	NA	NA	NA	2,500
Labor	HR	40	60	2,400
PE Certification	HR	8	80.00	640
Subtotal				11,540
20% Contingency				2,308
10% Administration				1,154
TOTAL				\$ 15,002

TABLE 8-1 – Cont'd

**CLOSURE COST ESTIMATE
CHEMETCO, INC.**

ACTIVITY	UNIT	QUANTITY	UNIT COST ¹	TOTAL COST ²
ZINC OXIDE LAGOONS				
"As-Is" Closure Demonstration				
Modeling Software	NA – Included with Cooling Canal			
Labor	HR	40	60	2,400
PE Certification	HR	8	80.00	640
Subtotal				3,040
20% Contingency				608
10% Administration				304
TOTAL				3,952
FLOOR WASH WATER IMPOUNDMENT				
Place and compact backfill	CY	1,200	3.75	4,500
Place and compact clay	CY	1,200	10.00	12,000
Place and seam membrane	SY	1,800	5.00	9,000
Place and seam fabric	SY	1,800	1.40	2,500
Place and compact sand	CY	600	7.20	4,320
Place and seam fabric	SY	1,800	1.40	2,500
Place and compact fill	CY	900	7.20	6,480
Place and compact topsoil	CY	300	10.75	3,225
Hydroseed and mulch	SY	1,800	0.35	630
Engineering oversight	HR	160	95.00	15,200
Replacement of MW # 7A (37') & MW 11 (68')	NA	NA	NA	2,500
PE Certification	HR	40	140.00	5,600
Subtotal				68,455
20% Contingency				13,391
10% Administration				6,846
TOTAL				\$ 88,692
TOTAL CLOSURE COSTS:				\$ 140,200
ADJUSTED TOTAL COSTS BASED ON INFLATION FACTOR³:				\$ 156,127
¹ Unit Costs are based Means Building Construction Cost Data, 1989 vendor prices and standard labor costs: ² All total costs are rounded to the nearest dollar. ³ Inflation factor based on Means City Cost Index from 1989-1994 (1.1136)				

TABLE 8-2
CONTINGENT CLOSURE COST ESTIMATE
CHEMETCO, INC.

ACTIVITY	UNIT	QUANTITY	UNIT COST	TOTAL COST
ZINC OXIDE BUNKER				
Rework and grade material	CY	5,400	4.00	21,600
Place and compact slag	CY	5,400	4.00	21,600
Place and seam membrane	SY	16,100	5.70	91,770
Place and seam fabric	SY	16,100	1.56	25,116
Place and compact sand	CY	5,400	8.00	43,200
Place and seam fabric	SY	16,100	1.56	25,116
Place and compact fill	CY	8,100	8.00	64,800
Place and compact topsoil	CY	2,700	12.00	32,400
Hydroseed and mulch	SY	48,000	0.39	18,720
Engineering Oversight	HR	200	85.00	17,000
PE Certification	HR	24	140.00	3,360
Subtotal				364,682
20% Contingency				72,937
10% Administration				36,468
TOTAL				\$ 474,087

TABLE 8-2 —Cont'd
CONTINGENT CLOSURE COST ESTIMATE
CHEMETCO, INC.

ACTIVITY	UNIT	QUANTITY	UNIT COST	TOTAL COST
COOLING CANALS				
<i>Installation and Placement of Cap: 4" Asphalt (Labor & Materials)</i>	<i>SY</i>	<i>12,340</i>	<i>7.50</i>	<i>92,550.00</i>
<i>Engineering Oversight</i>	<i>HR</i>	<i>16</i>	<i>85.00</i>	<i>1,360.00</i>
<i>PE Certification</i>	<i>HR</i>	<i>4</i>	<i>140.00</i>	<i>560.00</i>
<i>Subtotal</i>				<i>94,470.00</i>
<i>20% Contingencies</i>				<i>18,894.00</i>
<i>10% Administrative</i>				<i>9,447.00</i>
TOTAL				122,811.00
ZINC OXIDE LAGOON				
<i>Installation and Placement of Cap: 4" Asphalt (Labor & Materials)</i>	<i>SY</i>	<i>4,360</i>	<i>7.50</i>	<i>32,700</i>
<i>Engineering Oversight</i>	<i>HR</i>	<i>8</i>	<i>85.00</i>	<i>680</i>
<i>PE Certification</i>	<i>HR</i>	<i>4</i>	<i>140.00</i>	<i>560</i>
<i>Subtotal</i>				<i>33,940</i>
<i>20% Contingencies</i>				<i>6,788</i>
<i>10% Administrative</i>				<i>3,394</i>
TOTAL				44,122
TOTAL CONTINGENT CLOSURE COSTS (Zinc Oxide Lagoon, Cooling Canals and Zinc Oxide Lagoon)				\$ 641,020
Costs in 1994 dollars. Costs are rounded to the nearest dollar, Unit costs from 1994 Means Building Construction Cost Data and vendor quotes.				

TABLE 8-3
POST CLOSURE COST ESTIMATE
CHEMETCO, INC.

ACTIVITY	UNIT	QUANTITY	UNIT COST ¹	TOTAL COST
Cover inspection and weeding (FWI)	SY	1800	0.20	360
Cover repairs (fill and seed) (FWI)	SY	100	6.60	660
Fence repair/replace	FT	150	10.00	1,500
Groundwater Sampling	DAY	36	250.00	1,500
Groundwater Analysis (Pb, Cd, Ni, Cu, Sn, Cr, Ar, Zn, TOC, TOX)	EACH	52	200.00	10,400
Monitoring well (Repair/Replace)	EACH	1	3000.00	3,000
PE Certification	HR	32	80.0	2,560
Subtotal				19,980
20% Contingency				3,996
10% Administration				1,998
TOTAL				\$ 25,974
ADJUSTED ANNUAL TOTAL COST BASED ON INFLATION FACTOR²:				\$ 28,925
¹ Costs in 1989 dollars. Unit costs from 1989 Means Manual and vendor quotes. ² Inflation factor based upon Means City Cost Index 1989-1994 (1.1136). FWI = Floor Wash Impoundment.				

TABLE 8-4

**CONTINGENT POST-CLOSURE ESTIMATE
CHEMETCO, INC.**

ACTIVITY	UNIT	QUANTITY	UNIT COST	TOTAL COST
ZINC OXIDE BUNKER				
Cover inspection and weeding	SY	16,000	0.22	3,520
Cover repairs (fill and seed)	SY	800	7.35	5,880
COOLING CANALS AND ZINC OXIDE LAGOONS				
Maintenance & Repairs of Asphalt Surface (using costs based upon one time complete re-surfacing extrapolated over 30 yrs.: 16,700 sq.yds. @ \$2.00/sy)	YR	NA	1,120	1,120
Fence repair/replace	NA- Already incorporated into post closure costs, refer to Table 8-3.			
Groundwater Sampling				
Groundwater Analysis (Pb, Cd, Ni, Cu, Cr, As, Zn, TOC, TOX)				
Monitoring well (Repair/Replace)				
PE Certification				
Subtotal				10,520
20% Contingency				2,104
10% Administration				1,052
TOTAL				\$ 13,676
TOTAL ANNUAL CONTINGENT POST-CLOSURE COST:				\$ 13,676
(For Zinc Oxide Bunker, Cooling Canals and Zinc Oxide Lagoon)				
Costs in 1994 dollars. Unit costs from 1994 Means Manual and vendor quotes.				

CHEMETCO, INC.
SUMMARY OF TOTAL FACILITY CLOSURE/POST-CLOSURE COSTS

CLOSURE COST	\$ 156,127.00
Zinc Oxide Bunker Closure @ \$ 32,554	
Cooling Canals @ \$ 15,002	
Zinc Oxide Lagoons @ \$ 3,952	
<u>Floor Wash Impoundment @ \$ 88,692</u>	
Total @ \$140,200 x 1.1136 (Inflation Factor)	
POST-CLOSURE COST	\$ 867,750.00
Annual Cost @ \$28,925.00 x 30 years	
	<u>\$1,023,877 TOTAL*</u>

(*Note: Closure based upon Removal of ZnO from Bunker and As-Is Closure of the Cooling Canals and Zinc Oxide Lagoons)

CONTINGENT CLOSURE COST	\$ 739,787.00
Zinc Oxide Bunker Closure @ \$ 474,087	
Cooling Canals @ \$122,811	
Zinc Oxide Lagoons @ \$44,122	
Floor Wash Impoundment @ \$88,692 x 1.1136 =	
\$ 98,767	
CONTINGENT POST-CLOSURE COST	\$1,278,030.00
POST-CLOSURE COST @ \$ 28,925	
+ CONTINGENT POST -CLOSURE COST @ \$ 13,676	
= \$ 42,601 x 30 years	<u>\$2,060,418.00 TOTAL**</u>

(**Note: Closure based upon contingent closure of ZnO Bunker, Cooling Canals and Zinc Oxide Lagoon as a landfill.)